Results of Testing

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Cyclohexane	110-82-7	EFMONT Environmental Release Data	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	The data submitted by the seven member companies of the CMA's Cyclohexane Panel showed that environmental releases of cyclohexane from their facilities that manufacture, process or use cyclohexane decreased by 52.5% during a 5 year period from 1991 to 1995 and 57% as compared to the total cyclohexane emissions reported in the 1989 Toxic Release Inventory.	62 FR 61821; 11/19/97, Docket OPPTS-44644
Cyclohexane	110-82-7	HEADME Dermal absorption	40 CFR 795.226	rat	dermal, 6 hrs	1 and 100 mg/cm^2	4/sex	Cyclohexane was rapidly excreted after dermal administration. Expired breath was the major route of excretion of radiolabels accounting for ca. 78% of the excreted radiolabel at 1 mg/cm^2 and ca 57% of the excreted radiolabel at 100 mg/cm^2. Urine was a lesser route of excretion of radiolabel, accounting for ca. 20% at 1 mg/cm^2 and ca. 40% at 100 mg/cm^2. Essentially no radiolabel was excreted in the feces following dermal administration. The areas under concentration of total radiolabel in blood vs. time curves were ca. 3 times greater at 1 mg/cm^2 and ca. 2 times greater at 100 mg/cm^2 for females than males. Less than 0.1% and less than 0.4% of the dose of cyclohexane at 100 and 1 mg/cm^2, respectively, remained in the carcass 72 hours after dermal exposure. Thus, neither cyclohexane nor its metabolites would be expected to accumulate after repeated exposure to cyclohexane.	61 FR 295624; 5/20/96, Docket OPPTS-44627

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Cyclohexane	110-82-7	HEADME Dermal sensitization	40 CFR 795.226	rat	bolus intravenous	10 mg/kg	4/sex	Cyclohexane was rapidly excreted after intravenous administration. Expired breath was the major route of excretion of radiolabels accounting for ca. 70% of the excreted radiolabel. Urine was a lesser route of excretion of radiolabel, accounting for ca. 29% Essentially no radiolabel was excreted in the feces following intravenous administration. The areas under the concentration of total radiolabel in blood vs. time curves were similar for male and female rats following intravenous administration. Less than 0.4% of the dose of cyclohexane remained in the carcass 72 hours after intravenous exposure. Thus, neither cyclohexane nor its metabolites would be expected to accumulate after repeated exposure to cyclohexane.	61 FR 295624; 5/20/96, Docket OPPTS-44627
Cyclohexane	110-82-7	HEDSEN Dermal sensitization	40 CFR 798.4100	guinea pig	dermal	0.5 mL	20	The modified Buehler Method was used to assess the potential of cyclohexane to produce dermal sensitization in guinea pigs. A 10% concentration of cyclohexane in 95% ethanol was applied to the skin of nine male and eleven female rats for the induction phase. During the induction phase, the response ranged from no redness to very faint redness on the test article animals. Approximately fourteen days after the last induction, a challenge application (10% cyclohexane in acetone) was applied to a naive challenge site. Twenty-four hours after the challenge application of test article, very faint redness was observed in 1/20 animals. The incidence of sensitization among cyclohexane induced and challenged animals was 0/20. Cyclohexane was not a skin sensitizer.	61 FR 295624; 5/20/96, Docket OPPTS-44627

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Cyclohexane	110-82-7	HENEUR Schedule-controlled operant behavior, acute	1991 EPA Guidelines	rats	inhalation, 6 hrs	500, 2000. 7000 ppm	10	Schedule-controlled behavior methods were used to assess the behavioral effects of cyclohexane exposure. The measures of operant performance were fixed ratio response rate, fixed ratio pause duration, fixed interval response rate, and fixed interval index of curvature. On the test day the fixed ratio rate of response for the 7000 ppm group decreased (11%) relative to this group's rate on the day prior to exposure. The effect of 7000 ppm cyclohexane on fixed ratio response rate was transient. No compound-related effects of cyclohexane were detected on the day after exposure nor were any effects apparent for up to two weeks following exposure. The NOEL was 2000 ppm.	61 FR 11414; 3/20/96, Docket OPPTS-44622
Cyclohexane	110-82-7	HENEUR Neuropathology, subchronic	1991 EPA Guideline for neurotoxicity screening battery	rats	inhalation, 6 hr/day, 90 days	500, 2000, 7000 ppm	12/sex	During exposure to 2000 or 7000 ppm, rats had a diminished response or an absent response to delivery of a punctate alerting stimulus. The diminished or absent alerting response was interpreted to be a compound-related sedative effect. The sedative effect detected during exposures was transient, and no clinical observations of compromised neurological function were detected when the rats were evaluated immediately upon removal from the exposure chambers. The absence of compound-related effects during the Neuropathology evaluation further support the conclusion that cyclohexane-induced sedation during exposure to 2000 and 7000 ppm was transient and reversible. Although the compound-related sedation was transient, it was considered to be toxicologically relevant. Clinical observations revealed no compound-related effects. The NOEL was 500 ppm for both sexes based on the sedation observed at exposure concentrations of 2000 and 7000 ppm.	61 FR 49135; 9/18/96, Docket OPPTS-44631

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Cyclohexane	110-82-7	HENEUR Functional observational battery, subchronic	1991 EPA Guideline for neurotoxicity screening battery	rats	inhalation, 6 hr/day, 90 days	500, 2000, 7000 ppm	12/sex	During exposure to 2000 or 7000 ppm, rats had a diminished response or an absent response to delivery of a punctate alerting stimulus. The diminished or absent alerting response was interpreted to be a compound-related sedative effect. The sedative effect detected during exposures was transient, and no clinical observations of compromised neurological function were detected when the rats were evaluated immediately upon removal from the exposure chambers. The absence of compound-related effects during the Functional Observational Battery evaluation further support the conclusion that cyclohexane-induced sedation during exposure to 2000 and 7000 ppm was transient and reversible. Although the compound-related sedation was transient, it was considered to be toxicologically relevant. Clinical observations revealed no compound-related effects. The NOEL was 500 ppm for both sexes based on the sedation observed at exposure concentrations of 2000 and 7000 ppm.	61 FR 49135; 9/18/96, Docket OPPTS-44631
Cyclohexane	110-82-7	HENEUR Motor activity, subchronic	1991 EPA Guideline for neurotoxicity screening battery	rats	inhalation, 6 hr/day, 90 days	500, 2000, 7000 ppm	12/sex	During exposure to 2000 or 7000 ppm, rats had a diminished response or an absent response to delivery of a punctate alerting stimulus. The diminished or absent alerting response was interpreted to be a compound-related sedative effect. The sedative effect detected during exposures was transient, and no clinical observations of compromised neurological function were detected when the rats were evaluated immediately upon removal from the exposure chambers. The absence of compound-related effects during the Motor Activity evaluation further support the conclusion that cyclohexane-induced sedation during exposure to 2000 and 7000 ppm was transient and reversible. Although the compound-related sedation was transient, it was considered to be toxicologically relevant. Clinical observations revealed no compound-related effects. The NOEL was 500 ppm for both sexes based on the sedation observed at exposure concentrations of 2000 and 7000 ppm.	61 FR 49135; 9/18/96, Docket OPPTS-44631

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Cyclohexane	110-82-7	HERTOXTERA Developmental toxicity	40 CFR 798.4350	rats	whole-body inhalation, gestation days 7-16	0, 500, 2000, 7000 ppm	25	No treatment-related differences in fertility, number of resorptions, number of live fetuses, sex ratio, mean fetal weight, or incidences of fetal malformations or variations were observed. No evidence of developmental toxicity was observed at any treatment level.. The NOEL was 500 ppm.. At 2000 and 7000 ppm, diminished or no response to sound stimulus was noted. The NOEL was 500 ppm..	62 FR 8956; 2/27/97 Docket OPPTS-44637
Cyclohexane	110-82-7	HERTOXTERA Developmental toxicity	40 CFR 798.4350	rabbits	whole-body inhalation, gestation days 6-18	0, 500, 2000, 7000 ppm	20/group	There were no-compound-related effects on maternal toxicity and incidence of fetal malformations or variations observed at any test concentration. Therefore, the maternal and developmental NOELs were 7000 ppm.	63 FR 39520; 7/23/97 Docket OPPTS-44641
Cyclohexane	110-82-7	HERTOXTERE Reproductive effects	40 CFR 798.4700	rats	inhalation, 10 weeks	0, 500, 2000, 7000 ppm	30/sex	Adverse effects at the 7000 ppm level included statistically significant reductions in mean pup weight in the F1 and F2 generations. No adverse effects were observed at dose levels of 500 ppm and below. The systemic toxicity NOEL was 500 ppm and the reproductive NOEL was 2000 ppm based on decreased pup weights.	62 FR 31099; 6/6/97 Docket OPPTS-44640
Cyclohexane	110-82-7	HESTOX Subchronic inhalation toxicity	40 CFR 798.2450	mice	inhalation, 6 hr/day, 14 wks	500, 2000, 7000 ppm	20/sex (7000 ppm), 10/sex (500 and 2000 ppm)	No compound-related mortalities were observed in the study. No differences in mean body weights, mean body weight gain, food consumption, or food efficiency were observed between treated and control groups. During exposure, mice exposed to 2000 or 7000 ppm had diminished to absent responses to an alerting stimulus and showed clinical signs of toxicity. No compound-related abnormalities were observed during the final ophthalmological examination. No compound-related gross or microscopic changes were observed. The NOEL was 500 ppm in this study.	61 FR 49135; 9/18/96, Docket OPPTS-44631
Cyclohexane	110-82-7	HESTOX Subchronic inhalation toxicity	40 CFR 798.2450	rats	inhalation, 90 days	0, 500, 2000, 7000 ppm	20/sex (control and 7000 ppm); 10/sex (500, 2000 ppm)	At the 2000 and 7000 treatment levels, rat had diminished or absent response to an auditory alerting stimulus which was interpreted an a compound-related sedative effect. The sedative effect was transient and no clinical observations of compromised neurological function were detected when rats were removed from the exposure chamber.	61 FR 67333; 12/20/96, Docket OPPTS-44634